

PROJECT TITLE : PROTAGORAS  
 PERIOD COVERED : DECEMBER 1 - 23, 1980  
 WRITTEN BY : D. SCHULTHESS

ANALYSIS OF PARTIALLY DEPROTEINATED CIGARETTES (1)

900 g tobacco mixture (B - Blend, Project Spotless) were extracted during 6 hours with 9 l water containing 900 mg protease (Calbiochem) at pH 7.5 and 37°C.

The extracted tobacco was dried and sprayed with 200 ml of a 50% potassium citrate solution. Cigarettes were manufactured and analysed (OS - B - PROT 1). As comparison the values of cigarettes containing untreated tobacco (OS - B - tot) and Spotless tobacco (OS - B - SPO) are added :

OS - B - tot    OS - B - SPO    OS - B - PROT 1

Filler

TA %	1.96	0.18	0.25
RS %	6.70	0.00	0.00
N-NO <sub>2</sub> %	0.25	0.00	0.03
N-NH <sub>3</sub> %	0.31	0.05	0.05
Kjeldahl-N %	3.22	2.21	1.68
Protein %	14.50	13.31	9.73

Smoke

CO (MS) mg/cig	16.10	15.30	9.10
CO (SS) µg/cig	41.60	55.80	24.10
NO (MS) mg/cig	0.31	0.03	0.03
NO (SS) mg/cig	1.72	1.15	0.39
TPM mg/cig	19.1	13.2	10.08
SN mg/cig	1.31	0.21	0.23
HCN µg/cig	243	91	28
Puff count	8.0	6.4	9.4
Aldehydes mg/cig	1.41	1.40	1.29
ISH %	38	34	37
RTD mm H <sub>2</sub> O	113	110	117
Tobacco weight	755	653	689

#### FTIR - ANALYSIS (2)

The following three tobacco samples have been sent to PM Richmond for FTIR - analysis (3) :

1. OS - B - tot.
2. OS - B - tot, extracted during 6 hours 1 : 10 with water at 37°C, pH 7.5.
3. OS - B - tot, extracted during 6 hours with water containing 750 mg protease VIII (Sigma) at pH 7.5 and 37°C.

#### ELIMINATION OF PROTEIN FROM TOBACCO EXTRACTS (4)

Tobacco extract containing 8 g/l protein was supplemented with 10 g/l glucose and 0.2% potassium dihydrogen-phosphate. The mixture was sterilized and inoculated with *Candida utilis* NCYC 707. The pH was set at 5.5 and the temperature at 30°C. After an incubation of 24 hours, 33% of the protein was eliminated. Trials continue to improve these results.

#### REFERENCES

1. A. Hänggi - Notebook 791201, 16 - 19.
2. A. Hänggi - Notebook 791201, 21.
3. Memo from H. Gaisch to D. Schulthess dated 2.10.80.
4. A. Hänggi - Notebook 791201, 29 - 32.

*Schulthess*

D. Schulthess